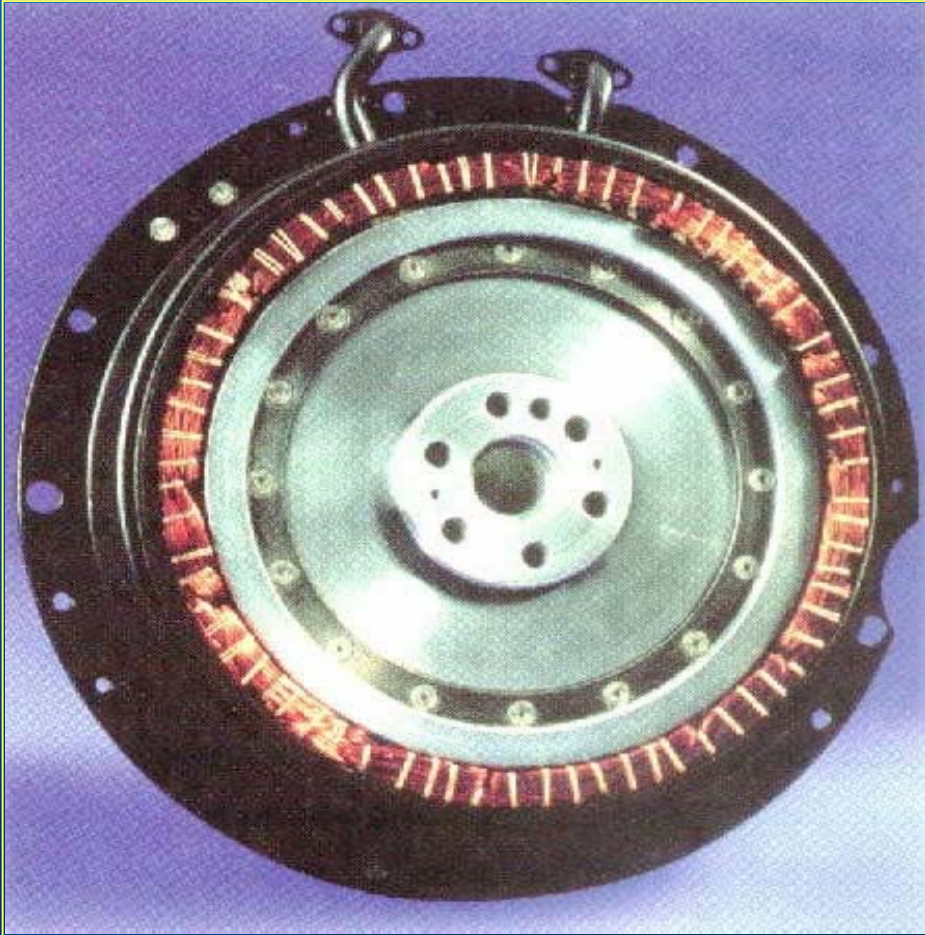


Miscellaneous Controls



- ◆ Engine Balancing
- ◆ Engine Braking
- ◆ Engine Starting
- ◆ Electric Generator
- ◆ High Voltage Enabler
(*Future Non-Thermal Plasma Power*)
- ◆ Engine Start/Stop Feature
- ◆ Torque Assist at Low Speeds

Advanced Fuels

- ★ Diesel Fuel

 - Sulfur Content*

 - Cetane No. & Aromatic Content*

- ★ Water Emulsions

- ★ G-T-L Fuels

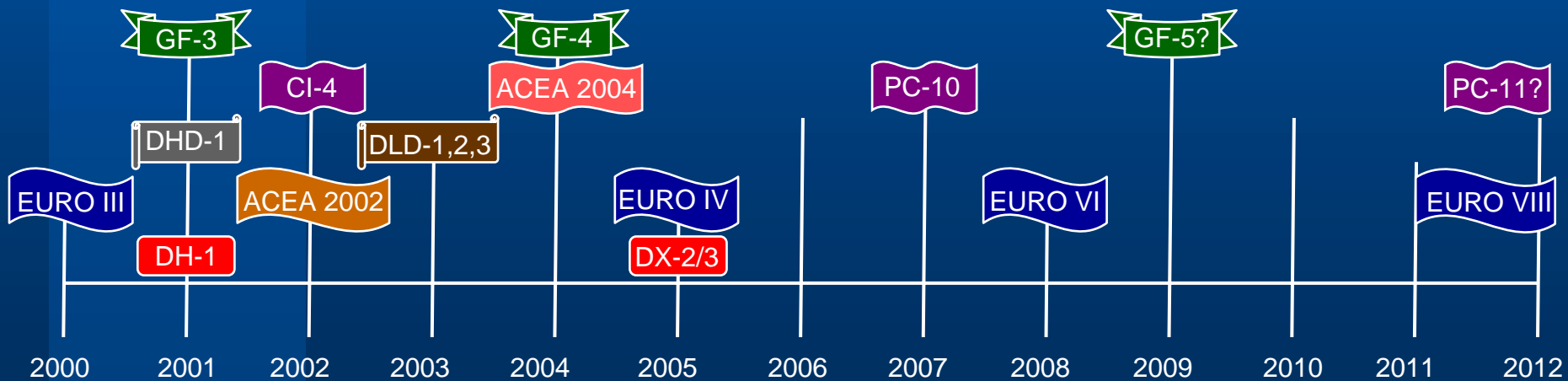
- ★ DME

- ★ Biodiesel

- ★ Synthetic Fuels

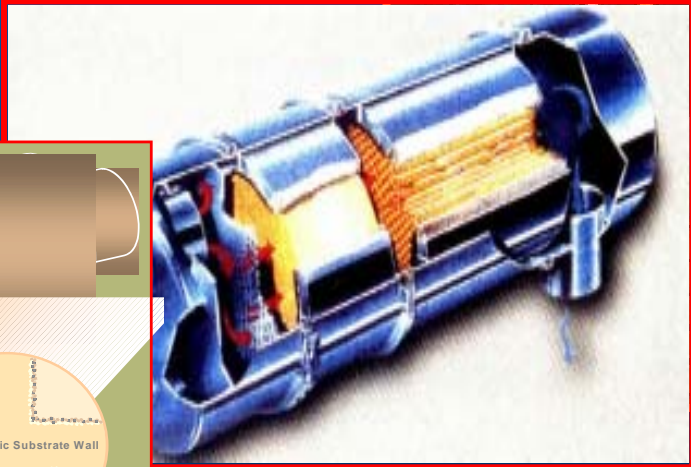
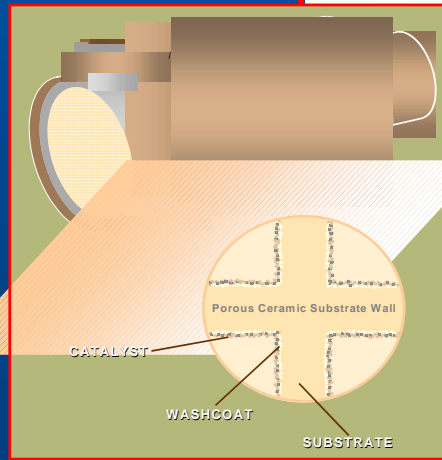
Lube Oil Formulations

- Exhaust Gas Recirculation
- Increased Fuel Dilution
- Long Lube Change Intervals
- Aftertreatment Friendly

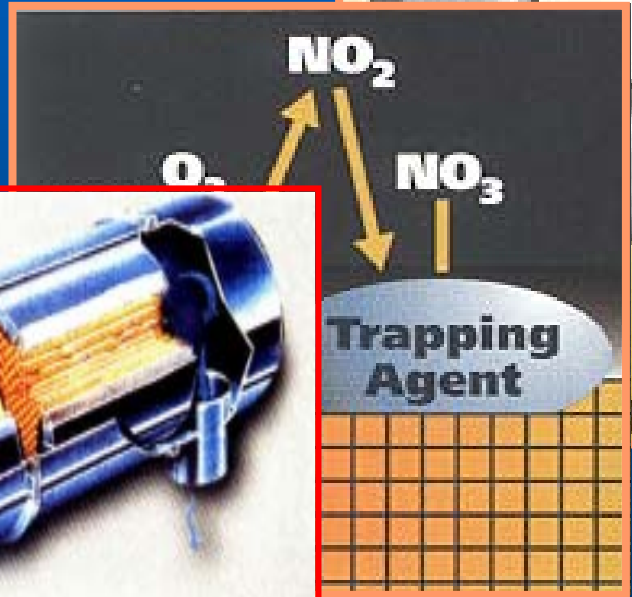


Adapted from Dr. E. Bardasz – The Role of Lube Oil in Modern Diesels – June 2004

Catalytic Exhaust Emission Controls



DPF

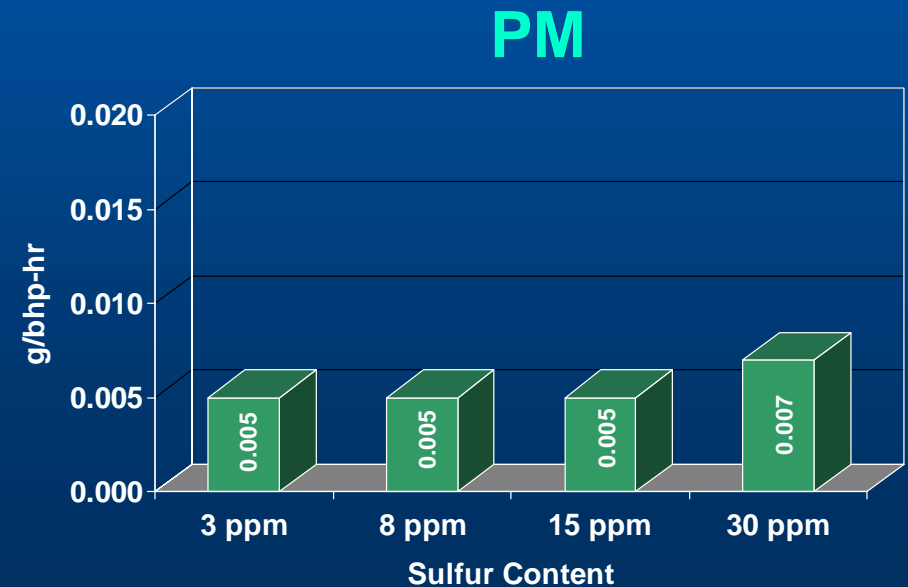
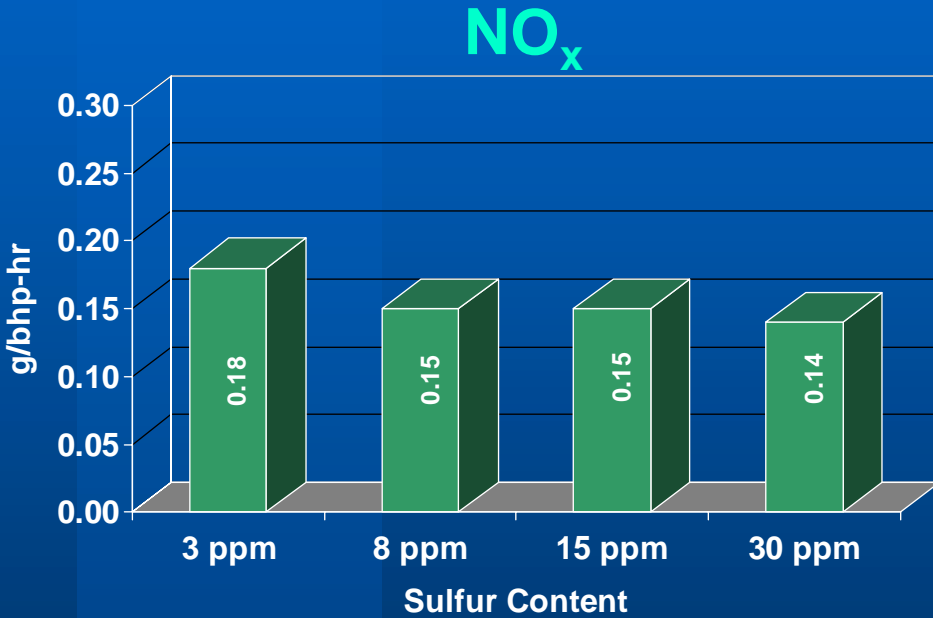


LNT



SCR

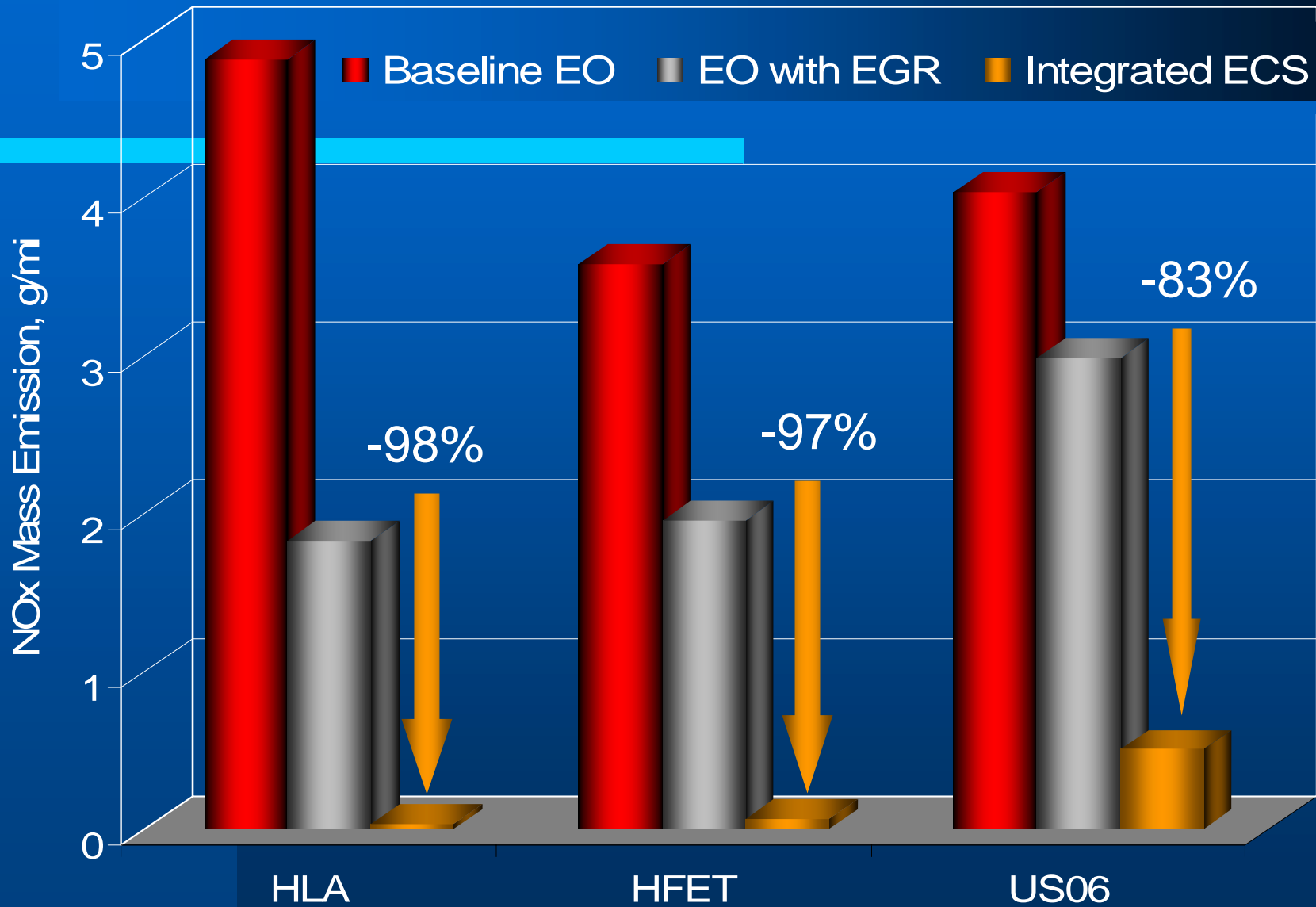
Accomplishments in Heavy-Duty Diesels (DPF+EGR+SCR)



From DEER-SwRI APBF Update 8/2004

MKhair-1004

Accomplishments in Medium-Duty Diesels (DPF+EGR+LNT)



From DEER-SwRI APBF Update 8/2004

